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September 25, 2007



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PATENT APPLICATION  
Attorney's Docket No.: 2376.2009-000  
(PB 03 0004)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: David W. Jenkins and Mark A. Bremner  
Application No.: 10/738,911 Group: 2616  
Filed: December 17, 2003 Examiner: Mounir Moutouakil  
Confirmation No: 8354  
For: METHOD AND APPARATUS FOR DIGITAL CROSS CONNECT

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Sept 25, 2007 Doreen M. Fisher

Date

Signature

Doreen M. Fisher

Typed or printed name of person signing certificate

AMENDMENT

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This Amendment is being filed in response to the Office Action mailed from the U.S. Patent and Trademark Office on June 25, 2007 in the above-identified application. Reconsideration and further examination are requested.

Please amend the application as follows:

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**Amendments to the Specification**

Please amend the title of the patent application at page 1, line 1 as follows:

METHOD AND APPARATUS FOR ADDING DIGITAL CROSS CONNECT  
CAPACITY

Please replace the paragraph at page 2, lines 25 through 28 with the following amended paragraph:

In accordance with the principles of the present invention, two or more cross connects can be used in a service provider's central office without a need for tandem ties. At least one of the tandem ties cross connects grooms inbound data traffic to local switch(es), and another grooms outbound traffic from the local switches to the rest of the network.

**Amendments to the Claims**

Please add new Claims 19 and 20. The Claim Listing below will replace all prior versions of the claims in the application:

**Claim Listing**

1. (Original) A method for grooming network traffic in a digital cross connect, comprising:  
grooming inbound traffic at a first transport switch for at least one local switch;  
and grooming outbound traffic at a second transport switch for the at least one local switch.
2. (Original) The method according to Claim 1 wherein the grooming of inbound and outbound traffic is performed independently.
3. (Original) The method according to Claim 2 wherein the grooming of inbound and outbound traffic is performed free of tandem tying the first and second transport switches.
4. (Original) The method according to Claim 1 further including configuring the at least one local switch to operate with the first and second transport switches.
5. (Original) The method according to Claim 1 further including performing protocol switching at the at least one local switch.
6. (Original) The method according to Claim 1 further including performing grooming at at least a third transport switch.
7. (Original) The method according to Claim 1 wherein the first and second transport switches are at least one of the following:  
wideband crossconnect switches, narrowband crossconnect switches, or  
broadband crossconnect switches.

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8. (Original) The method according to Claim 1 performed in a central office.
9. (Original) The method according to Claim 1 performed in an electrical, optical, or wireless network.
10. (Original) A system for grooming network traffic in a digital cross connect, comprising:
  - a first transport switch that grooms inbound traffic for at least one local switch; and
  - a second transport switch that grooms outbound traffic for the at least one local switch.
11. (Original) The system according to Claim 10 wherein the first transport switch and second transport switch operate substantially free of intermachine tandem ties.
12. (Original) The system according to Claim 10 wherein the local switch is configured to operate with the first and second transport switches.
13. (Original) The system according to Claim 10 wherein the local switch is a protocol switch.
14. (Original) The system according to Claim 10 further including a third transport switch that grooms other traffic.
15. (Original) The system according to Claim 10 wherein the transport switches are at least one of the following: a wideband crossconnect switch, narrowband crossconnect switch, or broadband crossconnect switch.
16. (Original) The system according to Claim 10 used in a central office.

17. (Original) The system according to Claim 10 used in an electrical, optical or wireless network.
18. (Original) A system for grooming network traffic in a digital cross connect, comprising:
  - means for grooming inbound traffic at a first transport switch for at least one local switch; and
  - means for grooming outbound traffic at a second transport switch for the at least one local switch, the first transport switch being distinct from the second transport switch.
19. (New) The method according to Claim 1 wherein grooming inbound traffic at the first transport switch includes separating higher speed traffic streams into lower speed traffic streams, and grooming outbound traffic at the second transport switch includes packing lower speed traffic streams into higher speed traffic streams.
20. (New) The system according to Claim 10 wherein the first transport switch separates higher speed traffic streams into lower speed traffic streams, and the second transport switch packs lower speed traffic streams into higher speed traffic streams.

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REMARKS

Claims 1-20 are pending in the application. Claims 1, 10, and 18 are independent claims. Claims have been rejected under 35 U.S.C. 102(e) and under 35 U.S.C. 103(a). Those rejections are respectfully traversed and reconsideration is requested.

Claims 19 and 20 are new claims. Support for the new claims can be found in the Applicant's specification on at least page 4, line 29 – page 5, line 5.

Specification

At the request of the examiner, the title of the present application has been amended to be more descriptive. Also, the written description has been amended to correct an apparent error.

Rejections under 35 U.S.C. 102(e)

Claims 1-5, 7-13, and 15-18 have been rejected under 35 U.S.C. 102(e) as being anticipated by Agrawal (U.S. 2003/0081546).

Before discussing the cited references, however, a brief review of the Applicants' disclosure may be helpful without limiting the claims. The Applicants' disclosure is directed to a method and system for adding cross connect capacity to a network using a plurality of transport switches, and without using tandem ties between the transport switches. Referring to Fig. 2, a given hub 115 includes local switches 220 that handle traffic, and at least two transport switches 210-1, 210-2. One transport switch 210-1 performs inbound grooming (i.e., separating high-speed traffic streams into comparable lower speed traffic streams) for the local switches 220, and the other transport switch 210-2 performs outbound grooming (i.e., packing the lower speed traffic streams into higher speed traffic streams) for the local switches 220. (See Applicants' Specification, page 4, line 26 – page 5, line 5.)

Turning to the cited reference, Agrawal discusses a class-based queuing architecture. Included in Agrawal are shapers/policers that limit the bandwidth of traffic that is output from the shapers/policers by delaying or dropping packets (see Agrawal, paragraph [0039]).

Regarding independent Claim 1, Agrawal does not teach or suggest "*grooming inbound traffic at a first transport switch for at least one local switch; and grooming outbound traffic at a*

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*second transport switch for the at least one local switch*" as claimed in independent Claim 1. The Office Action cites Fig. 2 of Agrawal, elements 136 and 152, as disclosing the groomers of Claim 1; however, elements 136 and 152 are processors that perform Random Early Discard (RED) and aggregate RED (ARED) algorithms used for shaping and policing traffic, not for grooming traffic.

As is known in the art, traffic grooming and traffic shaping are not equivalent. Traffic grooming is the process of packing a number of lower-speed traffic streams into a higher-speed traffic stream. The higher-speed traffic stream may also be re-groomed for transport at the lower-speed traffic's native level (*see* Applicants' Specification, page 3, lines 7-10, and page 3, line 28 – page 4, line 7).

Traffic shaping is the control the volume and rate of traffic sent in a network, and is achieved by delaying packets in a buffer. Traffic policing is related to traffic shaping, and is the dropping of packets when the buffer becomes full. Traffic policing may involve implementing a dropping algorithm such as a Random Early Discard (RED) algorithm or aggregate RED (ARED) algorithm. (*See* Agrawal, paragraphs [0022, 0039, and 0078].)

Therefore, Agrawal does not disclose grooming traffic at first and second transport switches and, thus, does not anticipate or make obvious independent Claim 1.

Independent Claims 10 and 18 are similar to Claim 1 and should be found in allowable condition for the same reasons as discussed above for independent Claim 1.

Dependent Claims 2-5, 7-9, 11-12, and 15-17 are directly or indirectly dependent on independent Claims 1 or 10 and, thus, are novel over the cited art for at least the same reasons as discussed above for independent Claims 1 and 10.

Furthermore, dependent Claims 2-5, 7-9, 11-12, and 15-17 recite further limitations that are neither taught nor suggested by the cited art. For example, Agrawal does not disclose "*wideband crossconnect switches, narrowband crossconnect switches, or broadband crossconnect switches*" as claimed in Claims 7 and 15.

New Claims 19 and 20 are directly dependent on independent Claims 1 or 10 and, thus, are novel over the cited art for at least the same reasons as discussed above for independent Claims 1 and 10.

As such, the 35 U.S.C. 102(e) rejections of Claims 1-5, 7-13, and 15-18 are believed to be overcome. Withdrawal of the rejections is respectfully requested.

Rejections under 35 U.S.C. 103(a)

Claims 6 and 14 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Agrawal.

Dependent Claims 6 and 14 are directly or indirectly dependent on independent Claims 1 or 10 and, thus, are novel and non-obvious over the cited art for at least the same reasons as discussed above for independent Claims 1 and 10. As such, the 35 U.S.C. 103(a) rejections of Claims 6 and 14 are believed to be overcome.

Accordingly, the present invention as claimed is not believed to be anticipated or made obvious by the cited or prior art. Removal of the rejections under 35 U.S.C. 102(e) and the rejections under 35 U.S.C. 103(a) and acceptance of Claims 1-20 is respectfully requested.

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**CONCLUSION**

In view of the above remarks, it is believed that all claims (Claims 1-20) are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

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Concord, MA 01742-9133

Date: 9/25/07



*JW*

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: David W. Jenkins and Mark A. Bremner

Application No.: 10/738,911 Group: 2419

Filed: December 17, 2003 Examiner: Mounir Moutaouakil

Confirmation No.: 8354

For: METHOD AND APPARATUS FOR ADDING DIGITAL CROSS CONNECT CAPACITY

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10/15/09 Anne Aulisen  
Date Signature

Anne Aulisen  
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**REQUEST FOR CORRECTED FILING RECEIPT  
FOR UTILITY APPLICATION**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

We hereby request that the following items of information be corrected in the Filing Receipt for the subject application received in this office on June 1, 2004.

A copy of the Amendment filed on September 25, 2007 is submitted herewith.

The errors and corrections appear below.

Please correct the title to:

METHOD AND APPARATUS FOR ADDING DIGITAL CROSS CONNECT CAPACITY

Enclosed are copies of the Filing Receipt with changes noted thereon and a copy of the Amendment filed on September 25, 2007.

Pursuant to instructions in the February 29, 2000 O.G., we hereby request that the errors which are identified above be corrected in the captioned application to which this request for correction is directed. It is understood that the Patent Office will issue an automatically-generated, corrected Filing Receipt in this and, if applicable, any other affected applications.

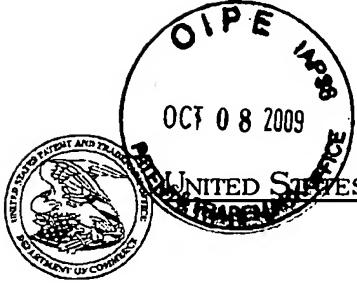
Respectfully submitted,

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10/738,911	12/17/2003	2661	900	2376.2009-000	3	18	3

CONFIRMATION NO. 8354

021005  
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CONCORD, MA 01742-9133

UPDATED FILING RECEIPT



\*OC000000012805026\*

Date Mailed: 05/27/2004

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Filing Receipt Corrections, facsimile number 703-746-9195. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

**Applicant(s)**

David W. Jenkins, North Aurora, IL;  
Mark A. Bremner, Barrington, IL;

**Assignment For Published Patent Application**

Tellabs Operations, Inc., Naperville, IL;

**Domestic Priority data as claimed by applicant**

**Foreign Applications**

If Required, Foreign Filing License Granted: 03/27/2004

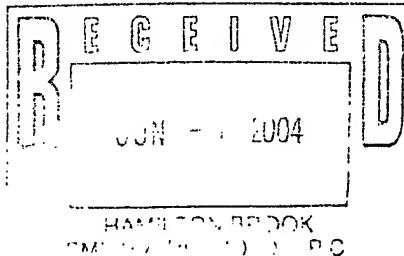
Projected Publication Date: 06/23/2005

Non-Publication Request: No

Early Publication Request: No

Title

Method and apparatus for digital cross connect capacity  
adding



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